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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,470	11/30/2000	Sang-Duk Lee	6192.0169.AA	1695

7590 01/27/2004

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EXAMINER
RUDE, TIMOTHY L

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 01/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/725,470	LEE ET AL.	
	Examin r	Art Unit	
	Timothy L Rude	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,8,9,12-14 and 23-27* is/are rejected.

7)☒ Claim(s) *6,7,10,11 and 15-22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claims

1. Claims 1, 3, 4, and 26 are amended.

Claim Rejections - 35 USC § 103

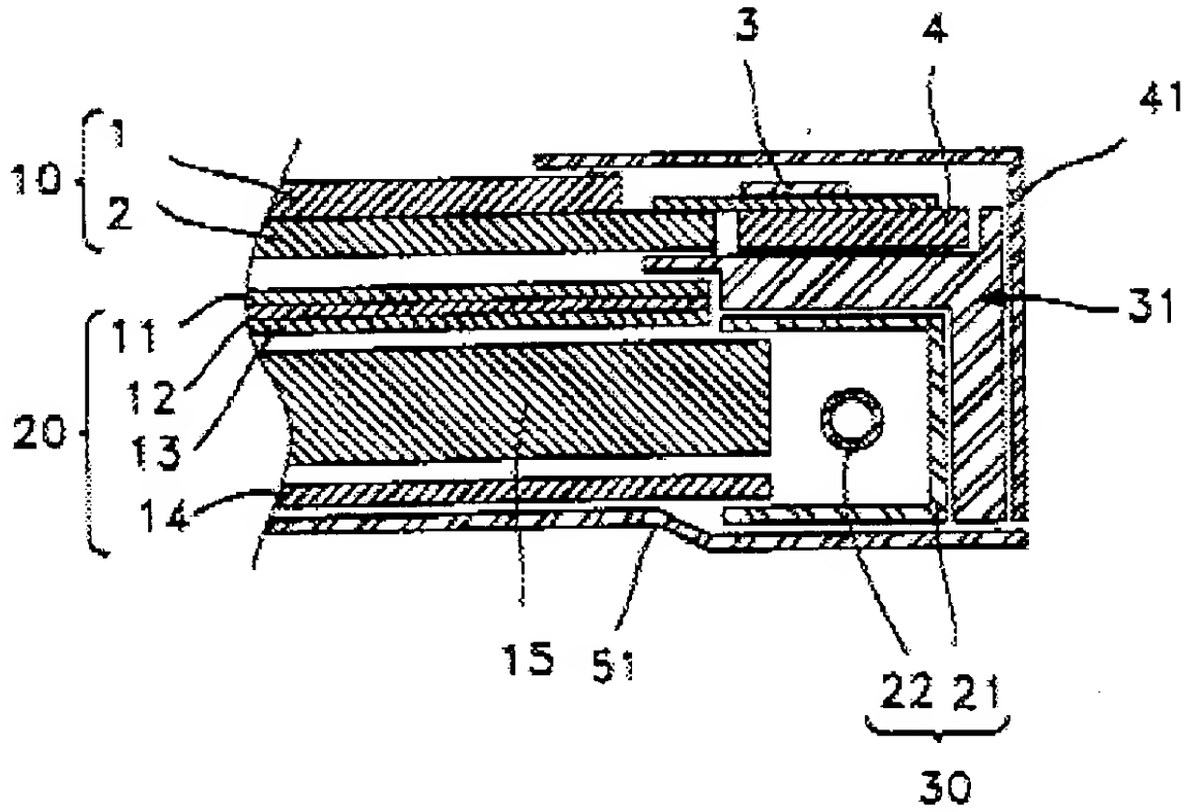
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-5, 8, 9, 12-14, and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee USPAT 5,966,191 in view of Hashimoto USPAT 5,442,470.

As to claims 1, 3, 4, and 27, Lee discloses in Figure 2 a liquid crystal display (LCD) device, comprising: a liquid crystal display panel, 1 and 2, and a flexible printed circuit (not labeled item between 2 and 3), attached to said liquid crystal display (LCD) panel, for applying driving signals to said liquid crystal display panel; a light guide plate and lamp assembly, 15 and 30, (Applicant's back light assembly) for providing a light to said LCD panel; a mold frame for receiving said liquid crystal display panel and said back light assembly; a chassis, 41, coupled to said mold frame, for fixing said liquid crystal display panel and said back light assembly to said mold frame.

FIG. 2



Lee does not explicitly disclose a support means for supporting said flexible circuit board towards said mold frame.

Hashimoto discloses (summary of the invention, col. 2, line 31 through col. 3, line 26) an embodiment shown in Figure 4 (col. 5, line 18 through col. 7, line 52).

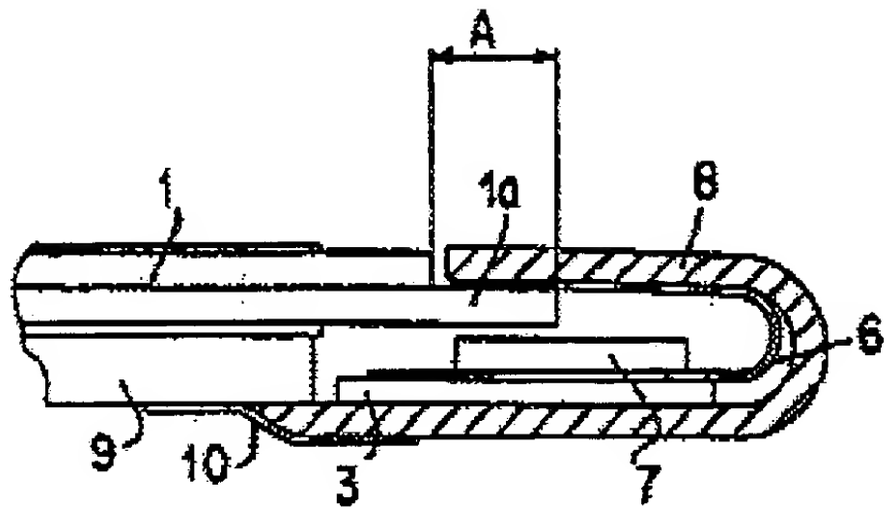


FIG. 4

Figure 4 of Hashimoto shows a liquid crystal display panel comprising: a flexible printed circuit, 6, which is attached to the liquid crystal display panel, for applying driving signals to said liquid crystal display panel which is curved into a recess which is deeper in the upper end of the outer side (Applicant's receiving recess) to receive a protruding portion, 7, in order to minimize weight and size (summary of the invention, col. 2, line 31 through col. 3, line 26) and to protect the circuits (col. 5, lines 4-17); and a frame member, 8, that has a moderate level of resiliency for nipping the liquid crystal display panel, 1, and the circuit board, 3, (col. 5, lines 58-68) (Applicant's support member for supporting the flexible circuit board towards the mold frame) to provide greater durability and resistance to vibration and impacts.

Hashimoto is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a flexible printed circuit board curved into a recess which is deeper in the upper end of the outer side to receive a protruding portion, and a support means to protect the circuits and to provide greater durability and resistance to vibration and impacts.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Lee with the flexible printed circuit board curved into a recess which is deeper in the upper end of the outer side to receive a protruding portion of Hashimoto and the support means of Hashimoto to protect the circuits and to provide greater durability and resistance to vibration and impacts.

As to claim 5, mere direction of bend of a separating support member separated from the chassis is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 8, mere use of a fixing film in which one end thereof is attached to the inner surface of the chassis and the other end thereof is fixed to the bottom surface of the mold frame, pressing the flexible circuit board towards the inner side of the receiving recess is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied

upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 9, mere use of a bonding material or a bonding tape for fixing the bottom surface of the mold frame and the end portion of the fixing film which is opposite to the bottom surface of the mold frame is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 12, mere use of a resilient member which fixes the flexible circuit board installed between the rear side surface of the flexible circuit board which is received in the receiving recess and the inner side surface of the chassis is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 13, mere use of an integral support member which is fixed to the chassis which is provided at a side wall portion of the chassis which corresponds to the flexible circuit board is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 14, mere use of an integral support member comprised of a resilient material is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 23, mere use of an integrated printed circuit board having a source portion for providing a data driving signal to the liquid crystal display panel through a data line of the liquid crystal display panel and a gate portion for providing a gate driving signal to a gate line of the liquid crystal panel, and the flexible circuit board is a gate

side flexible circuit board which is attached to the gate side of the liquid crystal display panel to transfer the gate driving signal from the integrated printed circuit board to the liquid crystal display panel is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claims 24 and 26, the mere addition of a second flexible circuit board attached to a second portion of the LCD panel is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

As to claim 25, the mere bending of the flexible printed circuit board perpendicular to the LCD is considered obvious given the broad teachings of Hashimoto and the motivations to minimize weight and size, protect the circuits, and to provide greater durability and resistance to vibration and impacts of Hashimoto, and are

therefore not patentably distinct, unless unexpected results are obtained. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill (in) the art, including nonpreferred embodiments (MPEP 2123).

Allowable Subject Matter

3. Claims 6, 7, 10, 11, and 15-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claims 6, 7, 10, 11, and 15-22, prior art of record did not disclose, alone or in combination, a LCD device comprising the specific design features of engaging holes of predetermined depth in an engaging recess, engaging plates on both sides of the fixing body, a penetrating hole in a fixing film, a number of circuit boards protruded and integral with a plurality of fixing films, etc. Those claimed design feature recitations are not considered obvious design alternatives given Lee in view of Hashimoto.

The closest reference is Hashimoto, but Hashimoto does not disclose nor render obvious the level of design specificity of engaging holes of predetermined depth in an engaging recess, engaging plates on both sides of the fixing body, a penetrating hole in a fixing film, a number of circuit boards protruded and integral with a plurality of fixing films, etc. found in claims 6, 7, 10, 11, and 15-22.

Response to Arguments

4. Applicant's arguments filed on 14 October 2003 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are as follows:

(1) Regarding claims 1, 3-5, 8, 9, 12-14, 23, 24, and 27, Integrated circuit, 7, of Hashimoto does not provide any supporting function.

(2) Regarding claims 25 and 26, references do not result in a flexible printed circuit board that is substantially perpendicular to the liquid crystal display panel.

Examiner's responses to Applicant's ONLY arguments are as follows:

(1) It is respectfully pointed out that integrated circuit, 7, is cited as a protruding portion of the flexible circuit board that is supported by the moderate level of resiliency (spring action) of frame member, 8, per Page 4 of the final rejection.

(2) It is respectfully pointed out that Lee in view of Hashimoto discloses and teaches a wide range of display, frame, circuit placements, and support means with motivations which Examiner considers robust to make Applicant's claimed invention(s) (claims 5, 8, 9, 12-14, and 23-26) obvious to those having ordinary skill in the art of liquid crystals at the time the invention was made, per rejections above. It is also respectfully pointed out that Examiner's assertions are consistent with MPEP 2123 wherein a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments, and mere

duplication of parts requires only routine skill in the art. Please note that curved portion of the flexible printed circuit of Hashimoto passes through vertical (Applicant's substantially perpendicular to the liquid crystal display panel). Consequently, Applicant's structure as broadly claimed is rendered obvious, to those having ordinary skill in the art of liquid crystals at the time the claimed invention was made, by Lee in view of Hashimoto per rejections above.

Conclusion

This is a RCE of applicant's earlier Application No. 09/725,470. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (703) 305-0418. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

TLR
January 20, 2004

Timothy L Rude
Examiner
Art Unit 2871